II.9-FFG-SYS SYSTEM SPECIFICATIONS

Flash flood guidance software for use in AWIPS consists of two major components. First, the Flash Flood Guidance System (separate from NWSRFS) computes guidance based on information from its parametric database and the OFS data base. The FFG system accesses the current rainfall-runoff relationship for each RFC basin, certain discharge time series to adjust for current flow levels, and other information from the OFS. The FFG system setup maintains information on threshold runoff values including their magnitude, location, and cross reference with MAP areas using OFS basin boundary information. The order and station/location contents of all FFG products are defined during the setup process. FFG products include gridded, headwater, and the areal groups of county and urban FFG. FFG is computed for 1, 3 and 6-hour (optional 12 and 24-hour) durations.

Second, the flash flood guidance (FFG) operation in NWSRFS OFS uses the rainfall-runoff and snow models selected by the RFCs and the current soil-moisture and snow conditions to produce up-to-date rainfall-runoff relationships for each RFC basin (MAP area). Relationships are generated for 1, 3 and 6-hour (optional 12 and 24-hour) duration rainfall amounts. The relationships are produced in tabular form and stored in a record in the Preprocessor Parametric Data Base (PPPDB) for each MAP area. The RFC can produce updated relationships whenever needed (typically at 6-hour intervals) and not have to store carryover prior to FFG computations.

This chapter describes the internal storage requirements, the parametric data requirements (i.e., parametric data in addition to that currently available in the OFS), the time series requirements, and the coding specifications for both the FFG operation and the Flash Flood Guidance System. The Flash Flood Guidance System requires significant internal storage for three (optional five) gridded FFG arrays--one each for 1, 3 and 6-hour (12 and 24-hour) duration. However, the FFG operation does not require any significant internal storage.